

ABSTRACT

While a biped walking mobile body is in a motion, such as level-ground walking, the position of the center of gravity (G0) of the biped walking mobile body, the position of an ankle joint (12) of each leg (2), and the position of a metatarsophalangeal joint (13a) of a foot (13) are successively grasped. The horizontal position of any one of the center of gravity (G0), the ankle joint (12), and the metatarsophalangeal joint (13a) is estimated as the horizontal position of a floor reaction force acting point on the basis of the combination of the contact or no contact with the ground at a spot directly below the metatarsophalangeal joint 13a of the foot 13 and a spot directly below the ankle joint 12, which is detected by ground contact sensors 51f and 51r, respectively, provided on the sole of the foot 13. The vertical position of the floor reaction force acting point is estimated on the basis of the vertical distance from the ankle joint (12) to a ground contact surface.